5.5 Fostering Green Power Markets

Policy Description and Objective

Summary

Green power is a relatively small but growing market that provides electricity customers the opportunity to make environmental choices about their electricity consumption. Programs in more than 40 states currently serve approximately 540,000 customers, representing nearly 4 billion kilowatt-hours (kWh) annually. Green power is offered in both vertically integrated and competitive retail markets. Green power programs have existed for approximately 10 years and have contributed to the development of over 2,200 megawatts (MW) of new renewable capacity over that time. A recent study estimates that this could reach 8,000 MW by 2015 (Wiser et al. 2001).

Because participation in green power programs is voluntary, the role for states may be more limited than with other clean energy policy options, but it is still important. States can play a key role in helping to accelerate green power market development and increase overall participation levels. States can also ensure that green power markets complement other policies already in place, such as system benefits charge (SBC) funds and renewable portfolio standards (RPS). Overall, state support of green power markets can require less effort on the part of states than for other policies (e.g., RPS) and they can provide significant benefits when properly designed.

The approach taken depends on whether or not a state has vertically integrated or competitive retail electricity markets. For example, in vertically integrated markets, several states now require utilities to offer a green pricing tariff. Although signing up for green power service remains voluntary, this policy ensures that all customers have the option available to them.

In restructured markets, green power products are available from a range of competitive suppliers.

Voluntary green power markets promote the development of renewable energy resources and the renewable energy industry by giving customers the opportunity to purchase clean energy. States can play a key role in fostering the development of green power markets that deliver low-cost, environmentally beneficial renewable energy resources.

Customers may also increasingly be able to choose renewable energy as their default service by so-called "green check-off" programs.

In both vertically integrated and competitive markets, creating an environment favorable to green power can require the development of several policies and programs. For states interested in taking a more active role, this section outlines the suite of policies and programs to be considered.

Objective

The main objective of supporting development of green power markets is to increase the generation and use of renewable energy by giving customers the choice to support cleaner electricity generation options. Green power programs allow customers to support renewable energy development above and beyond the levels determined through the utility resource planning process or through state policies, such as RPS. Most green power products are designed to promote the development of new renewable energy capacity rather than providing support for existing capacity. Some of the underlying objectives of developing a green power market are to:

- Decrease the environmental impact of electricity generation.
- Help reduce the cost of renewable energy generation over time.
- Provide customers with choice, even in vertically integrated markets.
- Increase competition in restructured markets by increasing the number and type of green power options available to electric customers.

- Support development of local resources and associated economic development opportunities.
- Decrease energy price volatility, increase fuel diversity, and provide a hedge against future electricity price volatility.
- Reduce demand for fossil fuels, easing supply concerns.

State support for green power markets is also a complement to other renewable energy policies and programs such as RPS (see Section 5.1, *Renewable Portfolio Standards*). In this way, green power markets provide additional resources beyond the base provided by RPS and other policies.

Benefits

Green power markets support the development of renewable energy without imposing any additional costs on ratepayers (as a class). Generally, only those customers who choose to participate in the programs pay the premiums needed to cover the above-market costs of renewable energy. However, the economic and environmental benefits of green power accrue to all ratepayers.

Properly designed green power programs can be structured to facilitate the execution of long-term contracts for renewable energy, which is critical for project developers seeking to obtain financing for their projects.

To date, green power markets in the United States:

- Have resulted in the construction of more than 2,200 MW of new renewable capacity (see Figure 5.5.1).
- Are supporting the development of an additional 455 MW of renewable capacity in the near term.
- Have permitted more than 540,000 customers to choose green power.

Figure 5.5.1: Renewable Energy Capacity Added to Meet Voluntary Green Power Demand Through 2004

New[a] Renewable Capacity Supplying Green Power Markets				
Renewable Energy Resource	In Place		Planned[b]	
	MW	%	MW	%
Wind	2,045.6	91.6	364.5	80.1
Biomass	135.6	6.1	58.8	12.9
Solar	8.1	0.4	0.4	0.1
Geothermal	35.5	1.6	0.0	0.0
Small Hydro	8.5	0.4	31.3	6.9
Total	2,233.3	100.0	455.0	100.0

a New capacity refers to projects built specifically to serve green power customers or recently constructed to meet Green-e standards and used to supply green power customers. Includes utility green pricing and competitive green power products. Capacity installed to meet state RPS requirements is not included.

b Planned refers to projects that are under construction or formally announced.

Source: Bird and Swezey 2005.

- Have avoided the release of approximately 2.7 million tons of carbon dioxide (CO_2) in 2003 alone.[35]

Status of Green Power

There are two basic types of green power products: *bundled renewable energy* and *renewable energy certificates* (REC) (see box on page 5-61). Depending on whether a state has vertically integrated or restructured markets, bundled renewable energy is either available from utility green pricing programs or from competitive green power marketers, respectively. REC products are available to anyone in the United States.

As of 2003, utility green pricing programs were available in 34 states at over 500 utilities[36] and competitive green power products were available in restructured markets in nine states and Washington, D.C. through more than 30 green power marketers

35 Based on an average CO_2 emission rate of 1,368 pounds per kilowatt-hour (lb/kWh) and 3.9 billion kWh of green power sales (emission rate was estimated from the Electric Power Annual 2003; DOE EIA 2004).

36 Many are municipal utilities or cooperatives.

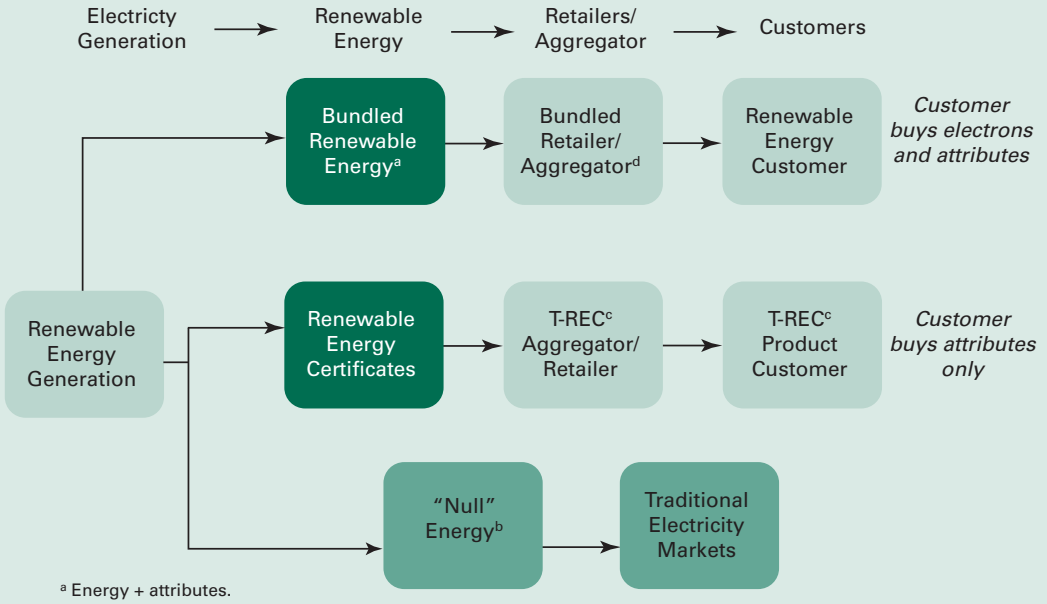
Types of Green Power Products

To fully understand the different types of green power products available to consumers, one must first understand the concept of *renewable energy certificates (RECs)*, also referred to as *green tags*, *green certificates*, *renewable energy credits*, and *tradable renewable certificates (T-RECS)*. RECs are used to value the attributes of renewable energy (i.e., the desirable properties of the renewable energy, such as low or zero emissions, and the fact that they are generated locally). The emergence of RECs as the "currency" for these attributes allows them to be separated from the power produced. Thus, a renewable energy generator now has two products to sell—electricity and RECs. From an economic perspective, the value of a REC can be used to cover the above-market cost of generating power from renewable energy. The value of a REC can also be used to differentiate different types of renewable energy (e.g., some customers may be willing to pay more for RECs generated from solar energy than from landfill gas). RECs are used for demonstrating compliance with renewable energy mandates (like RPS) or can be sold into voluntary markets, like green power.

There are two types of green power products (see figure below): bundled renewable energy and RECs. When a consumer purchases *bundled renewable energy*, he or she is purchasing both energy and attributes together. Thus, the value of the REC is included in the price of the green power. Alternatively, a consumer can purchase the attributes only (i.e., RECs only), while making no changes to his or her electricity purchases. The electricity associated with those RECs, now stripped of its attributes, is sold by the project owner into the market as ordinary electricity ("null energy").

Bundled renewable energy is sold in one of two ways. The term *utility green pricing* generally refers to an optional service or tariff offered by utilities to their own customers in vertically integrated electricity markets. *Green power marketing* refers to the selling of green power by competitive suppliers in competitive retail (restructured) markets.

Some REC-based electricity products are available to consumers located anywhere in the country. These RECs or T-RECs can be bought and sold at the wholesale level like other commodities, and also sold at the retail level to individual consumers. In addition to T-REC marketers and retailers, there are a number of brokers that serve this emerging REC market. The fact that there are T-REC marketers, retailers, and brokers demonstrates the importance of the concept of renewable energy attributes in helping realize the value of renewables in the marketplace.



[a] Energy + attributes.
[b] Energy without attributes.
[c] Tradeable Renewable Energy Certificate, also called a tradable renewable certificate.
[d] Includes regulated utilities.

Source: Katofsky 2005.

(Bird and Swezey 2004)[37] (see Figures 5.5.2 and 5.5.3). Combined, in 2003 these programs had annual sales of approximately 3.2 billion kWh.

In addition, 22 companies offered REC products in 2003. Sales in these programs represented an additional 700 million kWh in 2003.

While utility consumer participation rates are below 10%, green power markets continue to show significant annual growth.

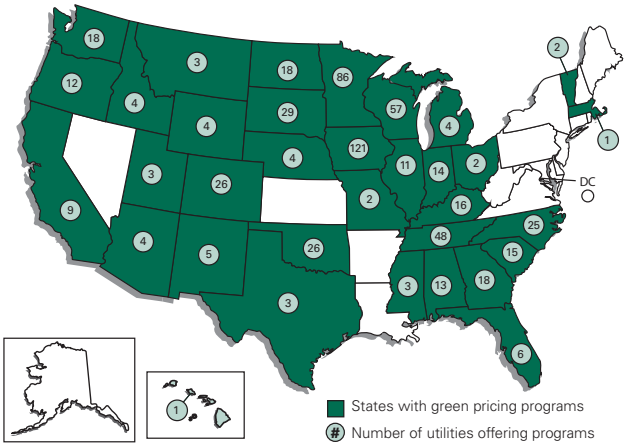
Creating a Favorable State Framework for Green Power Markets

States have found that green power markets are more effective when a number of complementary programs and policies are put in place. States have also learned that it is not sufficient to simply require that utilities provide a green pricing tariff or to open retail markets to competition in the hopes that this will attract green power marketers. This section outlines the suite of programs and options that states can use to create a favorable environment in which green power markets can grow.

Establishing the Program

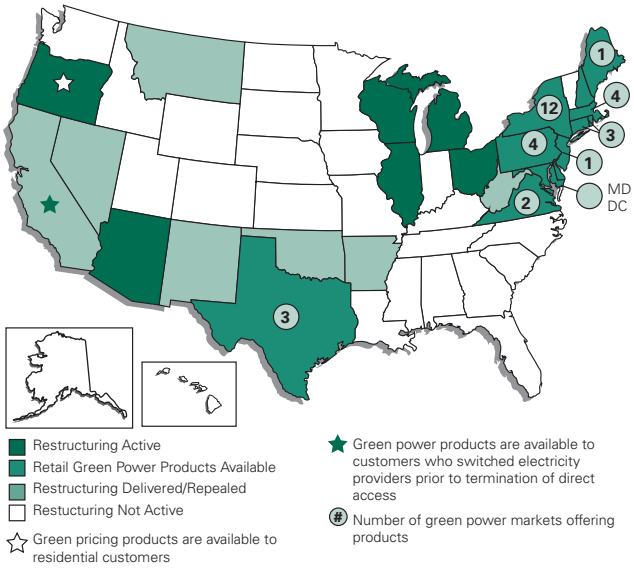
While purchasing green power is voluntary, some state legislatures (or if they have authority, state utility commissions) have taken an active role in making green power products available to consumers. The approach depends primarily on whether retail competition exists. In *vertically integrated markets*, some states have taken a first step by requiring that each utility develop and offer one or more green pricing tariffs. Participation in these programs remains voluntary. Some states have also required utilities to conduct education and outreach to help with market uptake as part of the utility's green power program.

Figure 5.5.2: States with Utility Green Pricing Activities



Source: DOE 2005b.

Figure 5.5.3: States with Green Power Marketing Activity in Competitive Electricity Markets[a]



a Represents bundled renewable electricity products available to residential and small commercial customers.

Source: DOE 2005a.

37 For an up-to-date list and statistics on green power markets, see the DOE Green Power Network Web site (DOE 2005).

In *restructured markets*, a green power mandate can require that all distribution companies act as a platform for green power marketers to more easily access customers receiving default service. These "green check-off" programs provide green power marketers access to electricity customers via utility bills, which eliminates the need for customers to switch electricity providers to purchase green power. For example, customers with low monthly electricity consumption lack options for obtaining green power in some locations. In addition, when competing with the default service, green power marketing companies can face high customer acquisition costs that can make the transaction uneconomical.

In some states, such as Pennsylvania and Texas, the retail market has been reasonably competitive and thus green power suppliers have entered the market to compete for customers with suppliers of traditional electricity. It is primarily in locations where retail competition has not developed that some states are requiring the default utilities to offer green power or provide a check-off program.

The green power product in check-off programs is typically provided by a third-party green power marketer. However, by involving the default service provider in green power marketing, it is possible for customers and renewable energy providers to have easier access to each other. Customers choosing to remain with their default service provider can now choose to purchase green power without having to take the additional step of choosing a new electricity supplier. Examples of states with green check-off programs include statewide coverage in New Jersey (beginning in October 2005) and select utilities in Massachusetts (see *State Examples* on page 5-67).

States can also consider setting quantitative goals and objectives for green power markets. For example, New Jersey set a target of doubling the number of green power customers by 2008, and Connecticut established a 0.5% voluntary green power target by 2008. States have also specified other aspects of the program, such as eligible technologies and resources, whether or not RECs can be used, and if and how cost recovery will be permitted on the part of utilities or retail electricity providers. As part of the process, a state can also outline roles and responsibilities of other parties, such as the state energy office and utility commission, set qualification and certification requirements for providers, and set standards for the green power products.

Roles for Stakeholders

Depending on the approach, a number of stakeholders have roles in fostering green power markets:

- *State Legislatures.* State legislatures have taken a role in enacting enabling legislation that would mandate and/or permit the development of green power offerings through utilities or distribution companies.
- *Public Utility Commissions (PUCs).* If they possess the authority, PUCs can mandate that utilities offer green power options. They are also responsible for approving utility green power tariff requests, and in competitive markets, ensuring that green power options are consistent with state rules regarding competition and supplier certification.
- *State Agencies and Independent Administrators of State SBC Funds.* These agencies and administrators may have a role in administering certain aspects of statewide green power initiatives and related programs (see *Key Supporting Policies and Programs* on page 5-64), ensuring consumer protection, and substantiating green power marketing claims.
- *Nonprofit Organizations.* Certain nonprofit organizations may also play important roles in information dissemination, consumer protection, and certification of green power products. For example, one source for independent certification of green power products is the Green-e program developed by the Center for Resource Solutions (Center for Resource Solutions 2005). In the Northeast,

SmartPower, working in collaboration with the Clean Energy States Alliance (CESA), has launched a major "Got Milk" style media campaign called "Clean Energy–Let's Make More!"

Key Supporting Policies and Programs

While requirements for utilities can be an important policy for advancing green power markets, a state can put in place additional, complementary policies. Some of the most important ones include:

- *Branding, Education, and Outreach*. These activities increase the level of awareness of green power and lead to higher participation rates. States have found that action-oriented messages that are linked directly to the available green power choices are the most effective.
- *Labeling and Disclosure*. These rules require that electricity providers include information about the fuel sources and emissions associated with the electricity they sell. This gives consumers information they can use to compare the impact of different electricity choices.
- *Green Power Customer Aggregation*. Aggregation is the formation of large customer buying groups that can collectively shop for green power supply. It provides a scale that can lead to lower prices and can also create the demand needed to support the entry of green power marketers. Examples include municipalities joining forces to meet their own power needs or municipalities acting as aggregators for their residents and businesses. Some religious organizations are also acting as aggregators (Bird and Holt 2002).
- *Consumer Protection*. It is important that green power product claims be verified (e.g., with respect to the resource mix). This can include the use of third-party certification or other accepted standards. For example, in Massachusetts, the Clean Energy Choice program uses the same eligibility requirements and attribute tracking system as the state RPS.

Other Supporting Policies and Programs

In addition to the major policies listed above, other policies can also aid in creating robust green power markets, including:

- *State Green Power Purchases*. States can lead by example by committing to a certain amount of green power to meet their own needs. This demand can also help establish the market. The federal government is currently working to meet green power purchase targets that were set by executive order, and a growing number of state and municipal governments have set similar requirements. (For more information, see Section 3.1, *Lead by Example*.)
- *Small Customer Incentives*. States can provide incentives to green power marketers to offset customer acquisition costs or to provide rebates to customers to encourage them to sign up for green power. Several states have tied incentives to market transforming activities as opposed to straight subsidies. For example, the Massachusetts Renewable Energy Trust (MRET), working with the nonprofit group, the Massachusetts Energy Consumers Alliance (Mass Energy), has created a REC-based green power product for which the premiums are tax deductible on federal income tax returns (RET 2005). The Connecticut Clean Energy Fund (CCEF) and SmartPower, through its Clean Energy Communities Program, is offering municipalities free solar photovoltaic (PV) systems if (1) they commit to 20% of their electricity coming from clean energy resources by 2010, and (2) enough local businesses and residents sign up for the CTCleanEnergyOptions program (CCEF 2005).
- *Large Customer Benefits*. Additional benefits and incentives could also be offered to larger customers to encourage them to make substantial, long-term commitments to green power purchases. A proven option is to design a green power offering that can include long-term "hedge" value for green power customers, such as an exemption from utility fuel adjustment charges and potential future environmental control costs. Incentives can

also include providing commercial customers with recognition that provides them with visibility and brand value tied to their green power purchases.[38] Having large customers agree to long-term green power purchases also has the advantage of allowing green power providers to enter into long-term contracts with renewable energy project developers, which in turn helps them secure financing for their projects. One of the most successful programs in the United States—the GreenChoice program offered by Austin Energy—provides customers with the fixed-price attribute of the utility's renewable power purchase contracts.

- *Net Metering*.[39] This policy supports the development of customer-sited green power. These high-visibility projects can raise overall awareness of renewable energy and can also generate RECs or green power for sale through green power programs. For example, utilities and other green power providers can buy up (i.e., aggregate) the RECs from such projects and resell them under their green power offerings. For more information on net metering, see Section 5.4, *Interconnection Standards*.

Interaction with Federal Policies and Programs

While few significant interactions occur between green power programs and federal policies, some issues are described as follows.

Federal renewable energy incentives, such as the production tax credit (PTC), help reduce the cost of renewable generation and thus the price premium that green power customers must pay. Typically, these incentives are complementary to green power markets; the sale of renewable energy through a green power program does not make the project ineligible for federal incentives, such as the PTC and accelerated depreciation (Title 26 of the U.S. Code, Sections 45 and 168).

The U.S. Environmental Protection Agency's (EPA's) Green Power Partnership is a voluntary partnership between EPA and organizations that are interested in buying green power (http://www.epa.gov/greenpower). Through this program, EPA supports organizations that are buying or planning to buy green power. As a Green Power Partner, an organization pledges to replace a portion of its electricity consumption with green power within one year of joining the partnership.

EPA offers credible benchmarks for green power purchases, market information, and opportunities for recognition and promotion of leading purchasers. The goal of the Green Power Partnership is to facilitate the growth of the green power market by lowering the cost and increasing the value of green power.

A federal renewable energy goal was established by Executive Order 13123 (GSA 1999), which requires federal agencies to increase their use of renewable energy, either through purchases or onsite renewable energy generation. Thus, federal agencies can serve as key green power customers in states across the country.

The EPA Green Power Partnership started in 2001 with the commitment of 21 founding partners. Today there are more than 560 partners with annual green power commitments exceeding 2.5 billion kWh. Green Power Partners encompass a wide range of public and private sector entities, including the U.S. Air Force, Whole Foods Market, Johnson & Johnson, the city of San Diego, the World Bank, Staples, BMW, and the states of Illinois, Maryland, and Pennsylvania. For a complete list of partners, go to: http://www.epa.gov/greenpower/partners/gpp_partners.htm.

[38] Austin Energy's GreenChoice program is an example of a program that offers both benefits to business customers: replacement of the fuel adjustment charge with a fixed green power charge, and recognition through online acknowledgement at http://www.austinenergy.com/, print advertisements, EnergyPlus (printed customer newsletter), and billboard advertising.

[39] Net metering enables customers to use their own generation to offset their electricity consumption over a billing period by allowing their electric meters to turn backwards when they generate electricity in excess of their demand. This offset means that customers receive retail prices for the excess electricity they generate.

Interaction with State Policies and Programs

There are important interactions between green power markets and existing or planned state policies and programs, as described below.

RPS have emerged as a widely used state-level policy in support of renewable energy (see Section 5.1, *Renewable Portfolio Standards*). Two key issues arise when considering support for green power markets in states with RPS. The first issue is whether renewable energy used to meet voluntary green power demand can also be used to meet RPS requirements. Specifically, if a utility sells renewable energy under a green power program to consumers, should it also be able to count that energy toward its RPS obligations? In most cases, the rules are written so that this is not permitted. Many voluntary green power purchasers have expressed concern that their personal investment in renewable energy is not used to help satisfy a mandate, but instead is contributing over and above any state requirements for renewable energy. For example, the New Jersey statewide green power program described in the *State Examples* section on page 5-67 contains language that specifically prohibits the sale of RECs used for RPS compliance in green power programs and vice versa.

Second, an RPS may create competition for limited renewable energy resources, making it harder for companies offering green power to find or develop renewable energy projects or to be able to source renewable energy at a reasonable price. The emergence of RECs as the currency for these RPS-related premiums, while beneficial overall to the renewable energy industry, is also leading to more liquidity, allowing renewable energy generators to sell their RECs to the highest bidder.

SBC funds (also called public benefits funds) are another widely used state level renewable energy policy. States can use some of these funds to support the development of robust green power markets through such activities as education and outreach, supporting the development of power projects that supply green power, and novel programs that encourage the use of green power (in *State Examples* section on page 5-67, see cases on Massachusetts, New Jersey, and Connecticut). For more information see Section 5.2, *Public Benefits Funds for State Clean Energy Supply Programs*.

The Role of Third Parties

Third parties can play a key role in the success of green power markets, including developing standards for green power products, providing independent certification of the products, and verifying marketer claims. There may also be a similar role for consumer advocacy groups. Having an independent organization provide program evaluation and monitoring can also be useful (see Connecticut in the *State Examples* section on page 5-68).

Program Implementation and Evaluation

States that have taken an active role in promoting green power have generally followed a number of steps in developing and evaluating green power programs:

- *Establish the Baseline*. Are consumers currently purchasing green power products? For example, even if there are no utility programs or competitive green power marketers, customers may be buying RECs from one of several national REC retailers.
- *Convene Potentially Interested Stakeholders in a Collaborative Process* to establish goals and other attributes of the program. This process can also be used to clearly outline the roles and responsibilities of all stakeholders. For example, Connecticut and New Jersey recently completed such processes (see *State Examples* section on page 5-67).
- *Regularly Evaluate the Success of Green Power Markets*. Possible metrics include the number of customers by customer class, kWh sold, MW of new generation developed, the cost of the green power premium, customer acquisition costs (a measure of program efficiency), the participation rate by customer class, and the number of marketers and

products available (a measure of market development and robustness).

Design issues to be considered include:

- What will be the cost premium charged for different product types (e.g., for different amounts of renewable energy content or different technology types)?
- Will green power be offered in fixed block sizes or as a percent of consumption?
- Does the program make use of bundled renewable energy or RECs (or both)?
- What length of time will customers be required to commit to when making a purchase?
- What are the appropriate geographic boundaries for eligible RECs and/or green power?
- How will cost recovery be dealt with?
- What type of product certification, if any, will be required?
- What types of projects, technologies, and resources will be eligible?

State Examples

The examples that follow were selected to show the diversity of policies and programs that states are using to create environments favorable to green power. Ultimately, each state will develop a set of policies and programs that best meets their specific needs.

New Jersey

New Jersey is an example of a restructured state using multiple policies to increase the development and use of renewable energy in the East. It already has an RPS and SBC fund in place, and has also set additional renewable energy goals with respect to in-state installation of renewable energy, technology cost reduction, job creation, and new manufacturing capability. In addition, the New Jersey Clean Energy Council set a goal to double the number of electric customers purchasing green electricity and increase the load served by qualified renewable resources by 50% over and above the Class I RPS.

Best Practices: Designing and Implementing Green Power Programs

Although green power programs are often implemented through utilities or green power marketers, states can play a major role in program design and in setting up the green power market structure. Some key considerations when designing and implementing a program include:

- Learn from other states' experiences to identify the most appropriate approach for your state.
- Encourage new resources to ensure that renewable benefits are realized.
- Create real value for green power customers, such as exempting them from utility fuel adjustment charges.
- For commercial customers, consider recognition programs to add value to their purchases.
- Create programs with sufficiently long time horizons to encourage and facilitate long-term contracting for power—a critical requirement for project developers to obtain financing for new power projects.
- Determine the appropriate relationship between green power purchases and compliance with RPS.
- Involve key stakeholders and experts in a collaborative design effort.
- Base program designs on your state's market characteristics and customer needs.
- Keep the program design simple and clear, while ensuring that the program leads to real benefits (e.g., development of new renewable energy capacity, emission reductions).

To support this goal, the state implemented a statewide green check-off program, the Green Power Choice Program (GPCP), which began October 1, 2005. The program requires utilities to offer retail electricity customers the option of selecting an energy product with a higher level of renewable energy than required by the state RPS. Through this program, green power is made available to all customers in the state using a sign-up option on electric bills–an example of a check-off program. This green power product must use renewable energy not otherwise allocated to meeting RPS requirements and must have full disclosure of the power's content.

New Jersey is the first state with restructured electricity markets to institute such a statewide voluntary green power program. As such, it is expected to result in lower marketing costs on a per-customer and per-kWh basis. However, it is also the first program to involve multiple utilities and multiple green power providers, which may result in additional costs associated with coordination and planning. If necessary, utilities can apply to recover the costs related to setting up and managing the GPCP. In addition, New Jersey is playing an important role with regard to setting up the mechanisms to certify and verify the attributes of the green power sold to customers.

Web site:
http://www.bpu.state.nj.us/cleanEnergy/GreenPowerChoice.shtml

Connecticut

Connecticut, like New Jersey, is a restructured state. However, Connecticut has both competitive and standard offer providers selling green power products. Connecticut has a Clean Energy Collaboration made up of key stakeholders including marketers, nonprofit organizations, utility companies, state agencies, and others supporting green power market development. Connecticut is also an example of a state that is using its SBC fund to promote voluntary green power market development.

Connecticut has established two voluntary green power market targets: (1) 0.5% (~150 gigawatt-hours [GWh]) by the end of 2007 through the CCEF, and (2) 3% to 4% (~900 GWh) by the end of 2010 through the *Connecticut Climate Change Action Plan 2005*. To assess green power market development, the CCEF has hired an independent third party to monitor and evaluate public awareness and voluntary green power market development in the state.

To support Connecticut's voluntary green power market, several marketing and incentive programs have been initiated, including:

- *SmartPower's Clean Energy–Let's Make More* television and radio ads and the 20% by 2010 clean Energy Campaign. Connecticut and New Haven are key campaign participants.
- *CCEF's Clean Energy Communities* program provides free solar PV systems to SmartPower-qualifying municipalities who (1) commit to SmartPower's 20% by 2010 Clean Energy Campaign, and (2) sign up a specific number of customers to the CTCleanEnergyOptions program. Several towns have already qualified.
- *Sterling Planet's Investment for the Greater Good* program offers rewards to nonprofit organizations, municipalities, and colleges and universities supporting green power by providing a 10% cash rebate for eligible purchases. In addition, eligible organizations may also receive 10% cash back on any residential enrollment they secure.

Connecticut's collaborative model has shown early signs of positive results, with approximately 3,000 sign-ups in two months with the new CTCleanEnergyOptions program.

Web site:
http://www.ctcleanenergyoptions.com/

Massachusetts

Massachusetts, like New Jersey, is a restructured state. However, unlike New Jersey, the retail providers in Massachusetts are not required to offer customers a green power option. Rather, to increase consumer demand for green power, the Massachusetts Technology Collaborative (MTC) is developing creative ways to use SBC funding to promote green power.

The MTC, a nonprofit group, manages the SBC funds for renewable energy in Massachusetts and has a general mandate to increase renewable energy supply and use in the state. To create consumer demand for green power, the MTC developed the Clean Energy Choice program.

The Clean Energy Choice program bundles together a number of features to increase consumer confidence in both green power and the value of green power to them. First, the Clean Energy Choice program identifies credible sources of green power for customers, thereby reducing their risk and simultaneously increasing their confidence in the authenticity of the green power marketer claims. Specifically, the Clean Energy Choice program requires that green power providers use the same definition of renewable energy used in the state's RPS. Second, participants that purchase green power from one of the providers (e.g., Mass Energy) are able to deduct the incremental cost of their green power purchase (i.e., the premium) from their federal income tax.[40] By providing customers with a tax deduction, the Clean Energy Choice program effectively reduces the customer's cost premium for green power by about one-third. Third, the Clean Energy Choice program matches, dollar for dollar, customers' green power premiums with grant payments to their local municipal governments for use in developing additional renewable energy projects. The payment received by a municipality is equal to the amount paid for green power by its residents, up to a total annual grant program cap of $1.25 million. Finally, the Clean Energy Choice program offers matching grants for clean energy projects serving low-income residents throughout the state, subject to a $1.25 million annual program cap. Thus, up to $2.5 million in SBC funds, roughly 10% of the annual SBC funds collected, is being used to promote voluntary green power in Massachusetts.

In the Clean Energy Choice program, consumers have two basic choices. First, there are already three utilities that provide a green power option directly to their customers, with several different products available to them. These utilities include Mass Electric, Cape Light Compact, and Nantucket Electric. The incremental monthly cost of green power is approximately $6 to $12. Second, customers throughout the state (including customers of the above utilities) can purchase RECs from Mass Energy. Under the Mass Energy program, a 500 kWh block of RECs costs $25.

Web site:
http://cleanenergychoice.org/

Washington

Washington has a vertically integrated market for electricity. It provides an example of state-mandated utility green pricing programs created via legislation. In 2001, the governor signed a bill that required all electric utilities to offer customers renewable energy options. The bill stipulates that utilities must regularly promote the option of either fixed or variable rates for voluntary green power in monthly billing statements.

As a result of this 2001 legislation, today there are 17 utilities in Washington that offer voluntary green power to their customers. As shown in Table 5.5.1, green pricing programs vary according to each utility's unique circumstances.

To provide one example, Puget Sound Energy's (PSE's) Green Power Program currently has over 14,000 commercial and residential customers. In 2004, these customers bought more than 46 million kWh of green power, enough renewable energy to serve approximately 4,000 homes for a year. Given this program's success, it was rated one of the top 10 voluntary green power programs nationwide in 2004 (DOE 2005c). PSE offers green power that is produced in the Pacific Northwest from wind and solar facilities. PSE's program allows customers to select the amount of green power they want. Options are available as low as $4 per month for 200 kWh of green power. Each additional block of 100 kWh is sold at a price of $2. For under $10 a month, a household can "green" approximately 30% to 50% of their electricity (based on 1,000 kWh per month usage).

[40] Mass Energy is a nonprofit organization and the MTC is a state agency. By a private letter ruling from the Internal Revenue Service (IRS), the MTC was able to classify the premiums paid for renewable energy purchased as a charitable contribution.

Web sites:
http://www.dsireusa.org/library/includes/map2.cfm?CurrentPageID=1&State=WA

http://www.eere.energy.gov/greenpower/markets/state_policies.shtml

New Mexico

New Mexico, like Washington, has a vertically integrated electricity market. It provides an example of a state-mandated utility green pricing program created via regulatory authority. By unanimous approval in 2002, the New Mexico Public Regulation Commission (PRC) created regulations that require all investor-owned utilities and electric cooperatives in the state to offer their customers a voluntary renewable energy tariff. (Cooperatives only have to provide renewable energy to the extent that renewable energy is available to them from their suppliers.) To raise

Table 5.5.1: Green Pricing Programs Offered in Washington *(as of May 2005)*

Utility Name	Program Name	Type	Start Date	Premium
Avista Utilities	Buck-A-Block	Wind	2002	0.33¢/kWh
Benton County Public Utility District (PUD)	Green Power Program	Landfill gas, wind	1999	Contribution
Chelan County PUD	Sustainable Natural Alternative Power	PV, wind, micro hydro	2001	Contribution
Clallam County PUD	Green Power Rate	Landfill gas	2001	0.7¢/kWh
Clark Public Utilities	Green Lights	PV, wind	2002	1.5¢/kWh
Cowlitz PUD	Renewable Resource Energy	Wind, PV	2002	2.0¢/kWh
Grant County PUD	Alternative Energy Resources Program	Wind	2002	2.0¢/kWh
Grays Harbor PUD	Green Power	Wind	2002	3.0¢/kWh
Lewis County PUD	Green Power Energy Rate	Wind	2003	2.0¢/kWh
Mason County PUD No. 3	Mason Evergreen Power	Wind	2003	2.0¢/kWh
Orcas Power & Light	Go Green	Wind, small hydro, PV	1997	3.5¢/kWh
Pacific County PUD	Green Power	Wind, hydro	2002	1.05¢/kWh
Pacificorp: Pacific Power	Blue Sky	Wind	2000	1.95¢/kWh
Peninsula Light	Green by Choice	Wind, hydro	2002	2.8¢/kWh
Puget Sound Energy	Green Power Plan	Wind, solar	2002	2.0¢/kWh
Seattle City Light	Seattle Green Power	Solar, wind, biogas	2002	Contribution
Snohomish County PUD	Planet Power	Wind	2002	2.0¢/kWh
Tacoma Power	EverGreen Options	Small hydro, wind	2000	Contribution

Source: DOE 2005.

awareness and demand for voluntary green power, utilities are also required to develop educational programs for customers on the benefits and availability of their voluntary renewable energy programs.

The renewable energy tariffs allow consumers the option of purchasing more renewable energy than what is required by the RPS. Tariffs offered by utilities and cooperatives in New Mexico range from 1.8 to 3.2 cents/kWh and combine varying mixes of wind, solar, and biomass, depending on the utility. In addition, some utilities offer green power produced only within the state, while others offer green power produced in New Mexico and in surrounding states. In 2004, the state legislature passed SB43, which provides additional guidance to the PRC and explicitly states that voluntary green power sales would need to be in addition to the state's RPS requirements.

Web sites:
http://www.nmprc.state.nm.us/utility/pdf/3619finalrule.pdf

http://legis.state.nm.us/Sessions/04%20Regular/bills/senate/SB0043.html

What States Can Do

The suite of policies and programs that can be used to create robust green power markets and help clean energy contribute to state goals is well understood. States can use the best practices and information resources in this *Guide to Action* to actively promote green power market development and to strengthen existing programs to deliver even more benefits to electricity customers.

Action Steps for States

States with a Competitive Retail Market

- Assess how well competitive markets are working with regard to green power product availability, quality, and uptake.
- If markets are not working to support green power, consider ways to support their development, as outlined in this document.
- Ensure that other state programs and policies are aligned with the needs of the green power marketplace.

States with a Vertically Integrated Retail Market

- Consider a process to evaluate whether to require utilities to offer a green pricing option to all customers, and if so, how to design this option (customer participation would still be voluntary).
- Develop a green pricing program that meets your state's particular situation.
- Ensure that other state programs and policies are aligned with the needs of the green power marketplace.

Information Resources

General Information

Title/Description	URL Address
Green Pricing Resource Guide, Second Edition. This guide focuses on utility green pricing programs, although most of the insights apply or can be adapted to green power marketing in restructured markets, and to a much lesser extent to renewable energy certificates.	http://www.awea.org/greenpower/greenPricingResourceGuide040726.pdf
National Council Series on Information Disclosure. The National Council's research program addresses disclosure of information to consumers who will choose retail electricity providers in restructured states. The Council has published several reports on this topic in draft format. Final published National Council reports will soon be posted on their Web site.	http://www.Ncouncil.org/pubs.html
Power to the People: How Local Governments Can Build Green Electricity Markets. This assesses the benefits and potential obstacles to green aggregation by local governments, while noting the potential of municipal aggregation in general to protect and benefit small power consumers.	http://www.repp.org/repp_pubs/articles/issuebr9/index_ib9.html
Trends in Utility Green Pricing Programs (2003). This report presents year-end data on utility green pricing programs, and examines trends in consumer response and program implementation over time.	http://www.eere.energy.gov/greenpower/pdfs/36833.pdf
Utility Green Pricing Programs: Design, Implementation, and Consumer Response. The purpose of this report is to provide aggregate industry data on consumer response to utility programs, which indicate the collective impact of green pricing on renewable energy development nationally, and market data that can be used by utilities as a benchmark for gauging the relative success of their green pricing programs.	http://www.eere.energy.gov/greenpower/resources/pdfs/nrel_35618.pdf

Federal Resources

Title/Description	URL Address
EPA Green Power Partnership. This is EPA's voluntary program to promote the use of green power by companies, government agencies, and other institutions.	http://www.epa.gov/greenpower
U.S. Department of Energy (DOE) Green Power Network. This is the link to the main Web site of the Green Power Network.	http://www.eere.doe.gov/greenpower

Information About States

Title/Description	URL Address
CESA. Twelve states across the United States have established funds to promote renewable energy and clean energy technologies. CESA is a nonprofit organization that provides information and technical services to these funds and works with them to build and expand clean energy markets in the United States.	http://www.cleanenergystates.org/

Title/Description	URL Address
Database of State Incentives for Renewable Energy (DSIRE). This Web site contains extensive information on federal, state, and local programs, policies, and incentives for renewable energy. The database can be searched by program type, including green power programs.	http://www.dsireusa.org
DOE Green Power Network. This reference links to information about state green power programs (i.e., states that have taken an active role in fostering green power) and power disclosure policies.	http://www.eere.energy.gov/greenpower/markets/states.shtml
Massachusetts Clean Energy Choice Program. This Web site describes the voluntary green power program being promoted by the MTC, the administrator of the state's system benefits fund. It includes descriptions of the green power offerings, and incentive programs offered by the MTC.	http://cleanenergychoice.org
Washington State Utilities and Transportation Commission (UTC) Green Power Programs. This reference links to the main page of the Washington green power programs, providing links to the enabling legislation, annual reports on the green power programs, and utility green pricing tariffs.	http://www.wutc.wa.gov/webimage.nsf/071d50fefd435186882567ad00778646/2a75cd42e959364288256ab000749d8b!OpenDocument

Examples of State Legislation and Regulations

State	Title/Description	URL Address
New Jersey	**State of New Jersey Board of Public Utilities, Order of Approval in the Matter of a Voluntary Green Power Choice Program. Docket No. E005010001**. This document contains the final New Jersey Board of Public Utilities (NJBPU) approval for the statewide green power program and also includes the document containing the final program description, framework, rules, and technical standards.	http://www.bpu.state.nj.us/wwwroot/cleanEnergy/EO05010001_20050413.pdf
New Mexico	**New Mexico legislation (S.B.43) supporting the RPS and voluntary green power programs**. This reference links to state legislation (Senate Bill 43, called the "Renewable Energy Act"). It further clarifies elements of the state RPS and also specifies that sales through the voluntary green pricing programs are in addition to the RPS requirements (see Section 7).	http://legis.state.nm.us/Sessions/04%20Regular/bills/senate/SB0043.html
	New Mexico utility commission final rule requiring the development of voluntary green power offerings (see Section 10.D). This reference links to the New Mexico PRC final rule that established the New Mexico RPS. In Section 10.D, it also requires utilities to offer a voluntary green pricing tariff to its customers.	http://www.nmprc.state.nm.us/utility/pdf/3619finalrule.pdf
Washington	**Revised Code of Washington (RCW) 19.29A.090: Voluntary Option to Purchase Qualified Alternative Energy Resources**. This is the enabling legislation for the Washington State UTC green power program.	http://www.leg.wa.gov/RCW/index.cfm?section=19.29A.090&fuseaction=section

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Center for Resource Solutions. 2005. Green-e renewable electricity certification program Web site (includes links to documents covering green power standards, verification, as well as certified products).	http://www.green-e.org/
DOE. 2005. The Green Power Network Web site (includes links to information on existing utility green pricing programs, green power marketer programs, and summaries of state policies on green power and disclosure). Accessed July 2005.	http://www.eere.energy.gov/greenpower/
DOE. 2005a. The Green Power Network Web Site. Information Resources: Green Power Marketing Activity in Competitive Electricity Markets. July 2005.	http://www.eere.energy.gov/greenpower/resources/maps/marketing_map.shtml
DOE. 2005b. The Green Power Network Web Site. Information Resources: Utility Green Pricing Activities. July 2005.	http://www.eere.energy.gov/greenpower/resources/maps/pricing_map.shtml
DOE. 2005c. Green Power Markets Web site. Green Pricing: Top Ten Utility Green Power Programs. December 2005.	http://www.eere.energy.gov/greenpower/markets/pricing.shtml?page=3
DOE EIA. 2004. Electric Power Annual 2003. U.S. DOE Energy Information Administration. December.	http://www.eia.doe.gov/cneaf/electricity/epa/epa_sum.html
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RET. 2005. Renewable Energy Trust Web site. Tax Deductible Option Why Are Some Choices Tax Deductible? Accessed July 2005.	http://www.cleanenergychoice.com/tax_deduct1.htm
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